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ABSTRACT

Cigarette smoking is a behavior with profound biomedical and psychosocial consequences across the life span. Although it is advertised in terms of youth, beauty, sexual appeal, success and independence, smoking is intimately linked with addiction, disease and death. Smoking has been shown to be a leading contributer to several kinds of cancer, lung disease, and coronary heart disease. Although smoking has been tied to the evolving role of women in Western society, it carries a heavy responsibility in terms of potential damage to unborn babies. Smoking behavior often begins in adolescence, when disease seems only vaguely related to everyday life. An examination of gender-specific statistics shows that females exceed males in a lifetime prevalence for smoking as well as for smoking 10 or more cigarettes a day. It has been suggested that teenage girls start smoking in an attempt to adopt a set of valued personality characteristics pictured in cigarette advertising. A deeper understanding is needed of what specific physiological and psychological variables lead girls to take up regular smoking. (JAC)

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CIGARETTE SMOKING BY ADOLESCENT FEMALES: IMPLICATIONS FOR HEALTH AND BEHAVIOR

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Cigarette Smoking by Adolescent Females: Implications for Health and Behavior

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Introduction

When I first considered the scope of this symposium, Women's Health and Health Behaviors Across Developmental Stages, I asked myself where in importance, and using what perspective, I would place the content of my own presentation. My answer was not long in coming--cigarette smoking is a behavior with profound biomedical and psychosocial consequences across the lifespan, when examimed from perspectives ranging from that of the individual all the way to that of society as a whole. It is a behavior intimately linked with disease and death, which is characterized by those who peddle its material form, the cigarette, in terms of youth, beauty, sexual appeal, personal success and independence. It is a behavior temporally tied to the evolving role of the woman in western society, one which brings greater devastation to our gender just as hard-sought changes are occurring in the realm's of education, employment and opportunity. And for our gender alone, it carries heavy responsibilities in terms of potential damaging and fatal effects upon the unborn fetus. From the first tantalizing puff by the experimenting adolescent to the last anguished inhalation of the deter-

mined-to-quit middle-aged smoker, cigarette smoking may be considered a prototype dependence behavior, an addiction, if you like. For all of these reasons, I consider this topic of utmost importance to our colleagues concerned with the physical health of women, with their social and with their psychological development across the lifespan.

Effects of Cigarette Smoking on Health

The 1980 Report of the Surgeon General, "The Health Consequences of Smoking for Women," summarized the extant knowledge on this topic (USDHHS, 1980). It pointed out in no uncertain language that "women are not immune to the damaging effects of smoking already documented for men,...that the first signs of an epidemic of smoking-related diseases among women are now appearing" (USDHHS,1980, p.v). This delay in morbidity and mortality is primarily due to the later onset of widespread smoking among women than men, dating to World War II rather than World War I. We will see a greater incidence and prevalence of smoking-related disease as women who took up smoking during and since this period, and who continue to smoke, grow older. Without belaboring this point, diseases related to cigarette smoking have been called America's number one preventable health problems.

I would like to summarize briefly the major disease consequences of tobacco use for women (USDHHS, 1980,1982). Smoking has been causally linked with cancers of the lung,

larynx, oral cavity and esophagus. It is considered a contributory factor in the development of bladder, kidney and pancreatic cancer, and has been linked with stomach cancer. The evidence regarding an association between smoking and cancer of the uterine cervix is conflicting, and urgently in need of further investigation. In terms of mortality, lung cancer will take the lives of more women in 1982, 31,000, than any other cancer site except breast, for which the estimated mortality is 37,000 (Silverberg, 1982). It is predicted that lung cancer mortality will surpass breast cancer mortality some time in this decade (USDHHS, 1982). For all sites causally linked to smoking, approximately 50,600 new cases of cancer in women will be diagnosed and 36,750 women will die in this year (Silverberg, 1982).

The risk of developing coronary heart disease (including acute myocardial infarction and chronic ischemic heart disease), the major cause of death among both males and females in our country, is increased by at least a factor of two in women who smoke (USDHHS, 1980). Of particular relevance is the ten-fold increase in risk of a myocardial infarction among women who both smoke and use oral contraceptives. This risk is both dose and age-related.

In addition to these two major disease categories, cigarette smoking also contributes to excessive death and disability from chronic obstructive lung diseases (emphysema and chronic

bronchitis) and peptic ulcer in women (USDHHS, 1980). The various mechanisms by which smoking interacts with the occupational environment to facilitate development of cancer and other diseases are now directly measurable in women as well as men as we enter an increasingly greater variety of occupations. Potentially differing responses may occur as a function of physiological differences in gender-specific hormonal status. Pregnant women face nine months of exposure to hazardous substances in the workplace, incurring potential teratogenic and perinatal mortality effects (USDHHS, 1980).

Finally, to enumerate the effects of cigarette smoking on reproduction (USDHHS, 1980) -- there is a dose-related reduction in birth weight which averages 200 grams, increased risk of miscarriage, spontaneous abortion, various placental abnormalities, preterm delivery, fetal death and neonatal death. Sudden infant death syndrome is more frequent among the infants of smokers (Shannon and Kelly, 1982), as is respiratory illness early in life, and long-term deficits in growth and intellectual development may occur. Finally, impairment in fertility in both men and women has been reported.

Behavioral Aspects of Smoking in Women

Initiation of Smoking. Smoking behavior primarily begins in adolescence, when the disease-connected sequelae seem, at best, vaguely relevant to daily life. Between 1968 and 1979 a series of surveys conducted on 12-18 year-olds by the National

Clearinghouse for Smoking and Health (NCSH) and the National Institute of Education (NIE) revealed a most distubing trend in female smoking (NIE, 1979). Not only was it increasing in each age group surveyed at each temporal point, but female smoking now exceeds male smoking, without convincing evidence of downturn.

Overall trends from annual surveys of High School seniors reveal a decline in the percentage of students reporting daily smoking from 28.8% in 1977 to 20.3% in 1981 (Johnston, Bachman and O'Malley, 1982). This finding is coupled with an increase in the proportion of students who think pack-a-day smoking involves "great risk" to the user (from 51% in 1975 to 64% in 1981). There has been some question about the validity of these downward trends, since data was collected by unvalidated self-report (telephone interview and questionnaire) in all NCSH/NIE and Johnston et al surveys. When validation measures are taken, such as saliva for thiocyanate analysis, positive self-reports of smoking increase markedly, sometimes by a factor of two (Evans et al, 1977; Luepker et al, 1981). The downward trends may be suspect because of a disparity between results from such unvalidated surveys and several validated one, and because there may now be a bias towards negative self-report with the changing social climate regarding smoking (Johnson, in press; Luepker et al, 1981).

Nonetheless, when we examine gender-specific figures from the Johnston et al HS senior survey, the lifetime prevalence of

smoking in 1981 was 73.3% for females and 68.6% for males. For those adolescents reporting any use of cigarettes during the past month, females exceed males -- 31.6% vs 26.5% -- as do they also in the prevalence of those smoking ten or more cigarettes per day, 13.8% vs 12.8%.

Psychosocial factors in adolescent smoking. What has been learned from survey data and research about why teenage female smoking exceeds male, and how may this information be utilized? There are some clues. A survey conducted for the American Cancer Society characterized the teenage female smoker as socially aggressive, sexually precocious, self-confident, rebellious, and rejecting of authority (Yankelovich et al, 1977). (Compared to her non-smoking female counterpart, she is more likely to consider parties a favorite leisure time activity, to have a boyfriend, to have had sexual relations, and less likely to feel nervous meeting new people. Compared to the teenage male smoker, she is less socially uneasy, expresses a lesser need to be popular with the opposite sex, and considers smoking less of a social asset).

In general, the literature has characterized adolescent smokers in the following way: they tend to have friends who smoke, to come from lower SES families, to have parents or older siblings who smoke, to be poorer scholastic achievers (with reduced motivation and lower aspirations), to be less likely to go onto college, and to be greater experimenters with alcohol and

other drugs than non-smokers (USDHHS, 1980).

It has been suggested that since adolescents are intensely interested and involved in adapting their actual self-images to their ideal self-images, initiating cigarette smoking may represent the adoption of a set of valued personality characteristics (Wong-McCarthy and Gritz, 1982). The ideal image of a woman has radically shifted in this century. In addition to the constant valuation of attractiveness, sexuality and interpersonal facility, there have been added independence, assertion and career achievement. The ACS survey assessed the reaction of girl smokers to those persons pictured in cigarette advertisements (Yankelovich et al, 1977). Not surprisingly, about half or more saw those persons as attractive, enjoying themselves, well-dressed, sexy, young and healthy. These are precisely those traits admired by teenage girls, and those which form part of the myth surrounding the social benefits of smoking (Chapman et al, 1982).

The advertising industry is not blind to the female market. A recent article in a trade journal commented that the rise in proportion of women smokers (in Europe), their increased social and economic power, and longer lifespan than men make them "...a prime target as far as any alert European marketing man is concerned. So, despite previous hesitancy, might we now expect to see a more defined attack on the important market segment represented by female smokers?" (Tobacco Reporter, 1982, p. 6).

While two-page advertisements placed in a major news-magazine by the Tobacco Institute claim that "...we don't think kids should smoke. Smoking is an adult custom based on mature and informed judgment. That's right, adults, not children." (Time Magazine, June 21, 1982), the adult models in cigarette advertisements often are dressed in clothing, and engaged in activities appropriate to adolescents. Such advertisements innundate almost 50% of billboards and a good deal of print advertising. An informal perusal of popular magazines revealed the percentage of all advertising represented by cigarette ads to average around 15%, varying from 7% in Glamour to 29% in Psychology Today (Wong-McCarthy and Gritz, 1982). The prominence and saturation of such advertising may lead teenagers to think of smoking as more popular than it is in actuality.

A couple of years ago I hypothesized that "smoking is just one behavior which may have been 'suppressed' by social norms proscribing appropriate behavior for women in the past, and which now may be 'disinhibited' in a very real sense" (USDHHS, 1980, p. 286). Watching the data come in, I am more concerned than ever with the implications of this statement.

Health Concerns. At this point, I would like to remark on how women perceive the health consequences of smoking. The 1979 NIE survey showed slightly greater concern among teenage females than

males for the health effects of smoking (91.0% vs 85.2%), as well as a greater likelihood to say that all cigarettes were equally hazardous (33.7% vs 25.9%). Teenage girls are slightly ahead of boys in the use of "lower tar" cigarettes (USDHHS, 1980). Yet, we have the disturbing suggestion that these milder cigarettes are being used as a vehicle for initiation into smoking by females, because they produce less of an acute toxic reaction to nicotine exposure (Silverstein et al, 1980). I hope that this generation of women remain concerned about smoking-related health issues, but integrate that concern into motivation and action to quit. Unfortunately, the results of surveys conducted for the Federal Trade Commission (FTC) show substantial ignorance among teenagers for the specific disease consequences of smoking (FTC, 1981).

Shortly after the release of the monumental 1979 Surgeon General's Report, one survey showed no gender differences in adult awareness of this Report, but significantly more worry evidenced by female than male smokers over what they knew. Most interesting, "a larger percentage of female smokers attributed a greater health risk from smoking to men than to women, thus suggesting (to these authors) that women's feeling of personal vulnerability may be weaker than men's (Tagliacozzo and Vaughn, 1980, p. 384). I would be eager to reassess a sample of women on similar issues at this time, when the 1980 Surgeon General's Report has been available for two years and public health efforts have been made to disseminate its vital messages.

Maintenance and Cessation of Smoking

The final topic I would like to address is that of cigarette smoking as a dependence process, or addiction. Careful research on pharmacological and behavioral mechanisms in smoking continue to delineate the parameters governing the maintenance and cessation of smoking, and the National Institute on Drug Abuse has published a series of monographs summarizing this work (Gritz, 1980; NIDA, 1977, 1979a, 1979b). The American Psychiatric Association has included both a Tobacco Dependence Syndrome and a Tobacco Withdrawal Syndrome in the DSM III (APA, 1980). Adolescent smoking is so important because 20-30% become regular users by age 18. The spontaneous quit rate in the teen years is estimated at 25% (regular smokers), with declining probability of cessation as the number of years of regular smoking increases (USDHHS, 1982). Formalized attempts at adolescent smoking cessation programs have fared poorly, with a general lack of interest in participation. (USDHHS, 1982).

Considerable difficulty is experienced by many adults attempting cessation, and there is a very high relapse rate, averaging 50-75% in treatment programs (USDHEW, 1979; USDHHS, 1982). About one-third of current regular smokers make a "fairly serious attempt" to quit each year, largely in unaided efforts, according to national survey data. About one-fifth of those who try report success (National Health Interview Survey, 1981; USDHHS, 1980). Adult male smoking has fallen from a prevalence

rate of 51.1% in 1965 to 36.7% in 1980, while adult female smoking has only changed from a prevalence rate of 33.3% in 1965 to 28.9% in 1980 (National Health Interview Survey, 1981; USDHHS, 1980). However, recent data provide optimism regarding women's smoking cessation patterns. An analysis of estimated rates of attempted and successful quitting among adult cigarette smokers in 1980 showed that "with respect to the probability of attempting to quit and the success rate, adult men and women cigarette smokers are now indistinguishable" (USDHHS, 1980, p.26). Between 1978 and 1980, 1.8 million adults quit smoking, 50% of which were female (National Health Interview Survey, 1981). The alleged greater difficulty of women to quit in formalized cessation programs must now be reexamined, and if still found present, researched for intervention efficacy (USDHHS, 1980). It is likely that the public health campaign as well as a variety of interpersonal forces are contributing to a breakdown of the former resistance of women to smoking cessation. It is critical to extend this trend, especially in the form of prevention, to our adolescent population.

Research and Policy Issues

There are some obvious gaps in our knowledge of teenage female smoking behavior. Primary amongst them is a deeper understanding of what specific constellation of physiological and psychosocial variables lead girls to take up regular smoking. I have outlined the general set of variables earlier, but we don't know the weighting factors for each. For example, how important

is peer pressure compared to physiological sensitivity to nicotine? How much, if at all, is advertising influential in experimentation with cigarettes or the transition to regular smoking?

We need this kind of information to be able to design gender-specific prevention programs, which I think are important because of the difference in male and female prevalence trends. Do teenage girls need to learn about effective weight management, exercise, cosmetic appeal, social skills and assertiveness, instead of assuming that these intangible benefits are delivered along with the tar and nicotine content of a cigarette? How much innovative health education about smoking are adolescent girls interested in getting: on immediate cardiovascular and pulmonary effects, on potential reproductive effects, on cosmetic effects like skin-wrinkling and tobacco-staining, and on the major neoplastic and non-neoplastic disease consequences.

The implication for public policy is clearly to broaden and intensify our national efforts at discouraging initiation in this vulnerable adolescent population. There is little confusion regarding this goal; however, the obstacles to a pro-health policy are well known. The sizeable power of the tobacco industry is manifest in economic, legislative and political spheres. Fragmentation within the governmental structure between research and programmatic funds also seems to produce an impediment to change (Rittenhouse, 1981). Research on the interactive nature

of impediments to policy formation would be valuable. All this will cost money -- in research, controlled intervention trials, and finally massive promotional campaigns -- but we cannot afford to wait. The ultimate costs in physical and psychosocial morbidity and mortality are incalculable.

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